RESET GNDRAD Datalogger Installation

I. Purpose:

The following procedure describes how to install a GNDRAD datalogger.

II. Cautions and Hazards:

None.

III. Requirements:

- A GNDRAD datalogger.
- Sensors:
    1. Eppley Pyrgeometer
    2. Eppley Pyranometer
    3. Heimann Infrared Thermometer
    4. REBS Net Radiometer
- Calibration report for each sensor.
- Notebook PC with RS232/EIA422/Impulse adapter cable.
- Checkout equipment (as specified by Sensor Mentors).

IV. Procedure:

A. Steps:

1. A high quality ground must be connected to the datalogger case before continuing with the rest of the procedure. If the datalogger does not have a good ground reference, a significate offset on the A/D measurements occurs.

2. Connect power to the datalogger.

3. Using the RS232/EIA422/Impulse adapter, connect a notebook computer to the datalogger.

4. Verify that the ZENO has the proper GNDRAD software configuration or upload the proper GNDRAD configuration file into the ZENO. The naming convention for the configuration file is GNDsssn.txt, where "**sss**" is the three-digit serial number of the datalogger and "**n**" is an alphabetic version number, e.g. GND301a.txt is the first GNDRAD configuration version for datalogger serial number 301.

5. Connect the sensors to the datalogger. Refer to the GNDRAD SENSOR CONFIGURATION TABLE (Attachment 1).

6. Use a digital voltmeter to measure the input power voltage. Adjust the calibration factor in the Sensor Menu (Sensor 8) to obtain the proper external battery voltage reading. View the latter by selecting the Scaled Sensor Data option from the ZENO Test Menu.

7. Check the calibration coefficients for the sensors in the ZENO Configuration. (See GNDRAD SENSOR CONFIGURATION TABLE, Attachment 1).

8. Follow any procedures given by the Sensor/Instrument Mentors.

9. Verify that the ZENO is measuring all signals properly by using the Test Menu and Output Message.

10. Verify that the ZENO is logging data using the Data Retrieval Menu.

11. If any change is made in the software configuration, e.g. a different calibration for a sensor, update the Configuration Version Number in the logger.

12. Save the Configuration to **EEPROM**.

13. If there was any change in the software configuration, download the current configuration to the notebook computer using the naming convention given in step 4 above.

14. Disconnect the notebook computer and connect the logger to ADaM.

15. Download the current ZENO Configuration file to ADaM.

16. Enter a table of the serial numbers and calibrations for the sensors connected to the GNDRAD datalogger into the appropriate log book.

17. Send a copy or a listing of the sensor serial numbers and the configuration file to the datalogger mentor.

V. References:

1. Coastal Environmental Systems, "Zeno-3200 Manual", Dec. 1994.

VI. Attachments:

1. GNDRAD Sensor Configuration Table.

Attachment 1. GNDRAD SENSOR CONFIGURATION TABLE

When installing or changing the following sensors or instruments, the calibration coefficients need to be written into the appropriate ZENO Sensor Menu. The offsets in the Sensor Menu and the values of the fixed resistors in the Process Menu for the PIR thermistors should only be changed as a result of a data logger calibration using 0.1% precision resistors.

Sensor or Instrument	Designation	Sensor Menu No.	Connector No.
Upwelling Pyrgeometer	PIRD	1	6
Upwelling Pyranometer	PSPD	2	5
Upwelling IRT	IRT-	3	3
Daytime Net Radiation	NET+	6	9
Nighttime Net	NET-	7	9